

# PATENT ABSTRACTS OF JAPAN

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 (22)Date of filing : 27.03.1990 (72)Inventor : SHINJO KATSUMI

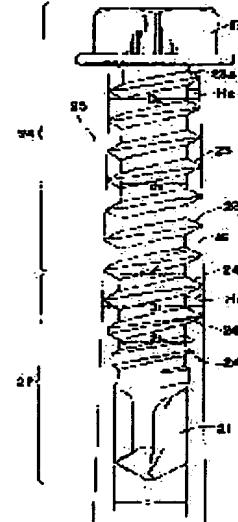
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## (54) COMPOSITE SCREW

### (57)Abstract:

**PURPOSE:** To reduce screwing resistance and aim at smooth tightening by providing a height of a screw thread of a tightening screw portion slightly smaller than that of a tapping screw portion having the largest outer diameter, and forming core diameters of both portions almost the same.

**CONSTITUTION:** A height H2 of a screw thread 23a of a tightening screw portion 23 is provided slightly smaller than a height H1 of a screw thread 24a of a tapping screw portion 24 having the largest outer diameter D1, and becomes gradually smaller as it approaches a head portion 13, thus forming a taper ending at the height H2 of a screw thread 23b having the smallest outer diameter D2. A core diameter d2 of the tightening screw portion 23 is substantially the same as a core diameter d1 of the tapping screw portion 24. Therefore, adaptable engagement can be realized in the tightening screw portion 23 with respect to a female screw by means of the tapping screw portion 24, thus reducing screwing resistance and smoothly realizing tightening force as required.




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## LEGAL STATUS

[Date of request for examination]

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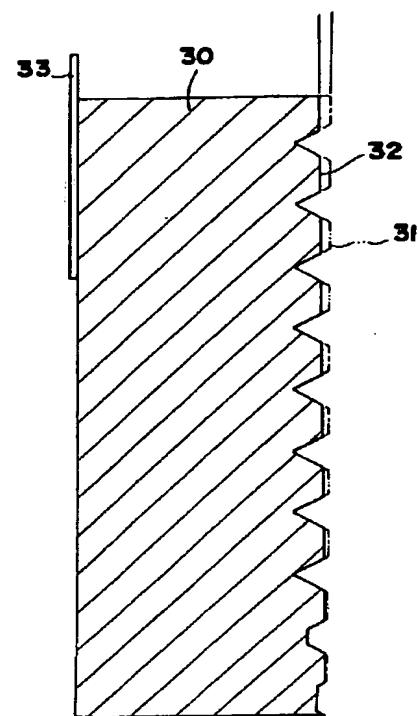
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FIG.6



合ドリルねじの正面図、第6図はねじ転造ダイスの横断面図、第7図ないし第10図は本発明の複合ドリルねじによる締結順序を示す説明図である。

- |              |            |
|--------------|------------|
| 11…第1シャンク    | 12…第2シャンク  |
| 13…頭部        | 14…平坦面     |
| 15…溶接突起      | 16…破断部     |
| 21…ドリル部      | 23…締結ねじ部   |
| 23a, 23b…ねじ山 |            |
| 24…タッピングねじ部  | 24a…ねじ山    |
| 25…複合ドリルねじ   | 26…締結部分    |
| 27…ねじ立て部分    | 30…ねじ転造ダイス |
| 32…傾斜面       |            |

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高良英選



- |              |            |
|--------------|------------|
| 11…第1シャンク    | 12…第2シャンク  |
| 13…頭部        | 14…平坦面     |
| 15…溶接突起      | 16…破断部     |
| 21…ドリル部      | 23…締結ねじ部   |
| 23a, 23b…ねじ山 |            |
| 24…タッピングねじ部  | 24a…ねじ山    |
| 25…複合ドリルねじ   | 26…締結部分    |
| 27…ねじ立て部分    | 30…ねじ転造ダイス |
| 32…傾斜面       |            |

FIG.1

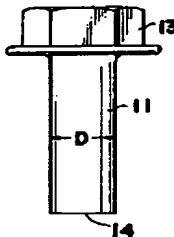


FIG.2

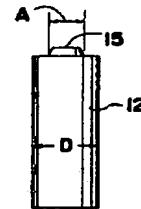


FIG.3

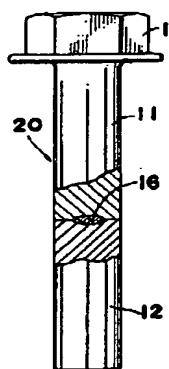
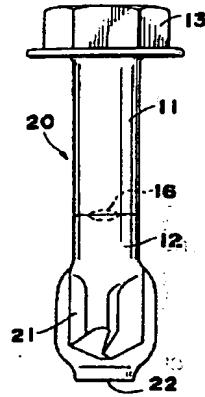


FIG.4



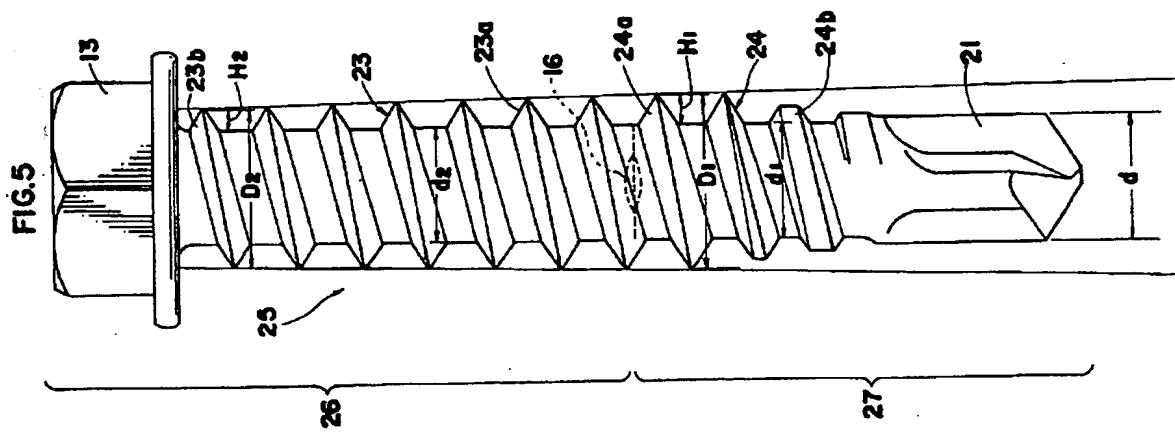


FIG. 7

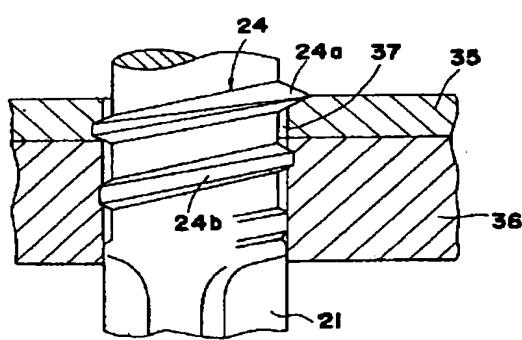


FIG. 8

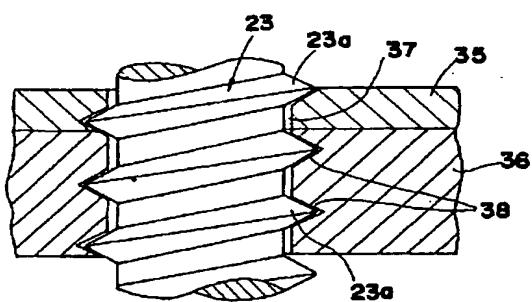


FIG. 9

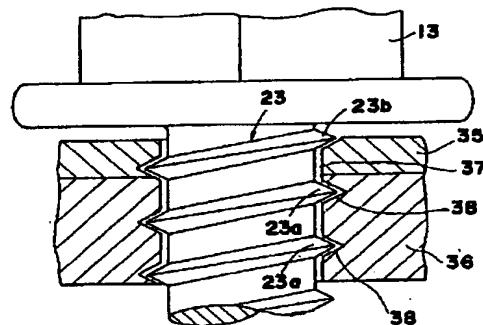


FIG. 10

